

Amendments to the Claims

Amend claims 1 and 2.

Add new claims 3-66.

The following listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) An ultrasound probe positioning immersion shell system for the human eye, comprising, in order:
 - a. an upper cylindrical body and a lower cylindrical body;
 - b. a plurality of external vents with guide surfaces in a top of said upper cylindrical body, and in a bottom of said upper cylindrical body;
 - c. a hole receiving means for an ultrasound probe in an upper section of said upper cylindrical body; and,
 - d. a fluid transfer port means in a section of said upper cylindrical body, whereby a lip extends over and about the human eye during an ophthalmology procedure.

2. (currently amended) An ultrasound probe positioning immersion shell system for the human eye, comprising, in order:
- a. an upper cylindrical body and a lower cylindrical body;
 - b. a vent in said upper cylindrical body; and,
 - c. a fluid transfer port means, whereby a lip extends over and about the human eye, with an extension over the clear cornea onto the sclera or white of the eye during an ophthalmology procedure.

3. (new) An ultrasound probe positioning immersion shell for use between an ultrasound probe having a transducer with a body region adjacent the transducer and a human eye with a cornea, the shell comprising:

- a. an upper cylindrical body tapering, at a tapered region, to a lower cylindrical body, the upper and lower cylindrical bodies defining a central axis, an upper chamber and a lower chamber;
- b. an external guide ring extending across an upper region of the upper cylindrical body, the external guide ring including:
 - (1) at least one guide surface extending through the external guide ring, each of the external guide surfaces spaced a like radius from and centered along the central axis; and,
 - (2) at least one external vent extending through the external guide ring;
- c. a fluid transfer port extending through the upper cylindrical body to communicate with an upper chamber;
- d. an internal guide ring, interior to the tapered region and between the upper and lower chambers, the internal guide ring including:
 - (1) a plurality of internal guide surfaces extending through the internal guide ring, each of the internal guide surfaces spaced a like radius, less than the like radius of the external guide surfaces, from and centered along the central axis; and,
 - (2) a plurality of internal vents extending through the internal guide; and,
- e. a lip, for contacting the human eye about the cornea of the eye, the lip situated at a lower extreme of the lower cylindrical body.

4. (new) The shell of claim 3, further comprising a threaded hole in the upper cylindrical body.

5. (new) The shell of claim 3, wherein each of the external guide surfaces of the plurality of external guide surfaces are arcuate.

6. (new) The shell of claim 5, wherein each of the external vents of the plurality of external vents are arcuate and intersect at least two external guide surfaces of the plurality of external guide surfaces.

7. (new) The shell of claim 6, wherein each of the arcuate external vents of the plurality of arcuate external vents has a common offset from the central axis.

8. (new) The shell of claim 3, wherein each of the internal guide surfaces of the plurality of internal guide surfaces are arcuate.

9. (new) The shell of claim 8, wherein each of the internal vents of the plurality of internal vents are arcuate and intersect at least two internal guide surfaces of the plurality of internal guide surfaces.

10. (new) The shell of claim 9, wherein each of the arcuate internal vents of the plurality of arcuate internal vents has a common offset from the central axis.

11. (new) The shell of claim 3, wherein the external guide ring is radially symmetrical about the central axis.

12. (new) The shell of claim 3, wherein the internal guide ring is radially symmetrical about the central axis.

13. (new) The shell of claim 3, wherein the plurality of external guide surfaces and the plurality of internal guide surfaces are radially symmetrical about the central axis.

14. (new) The shell of claim 3, wherein the lip is radially symmetrical about the central axis.

15. (new) The shell of claim 3, wherein the plurality of external guide surfaces and the plurality of internal guide surfaces interact with the tapered body so as to firstly, guidingly and slidingly vertically align, during insertion, and then secondly, stoppingly position the ultrasound probe, once appropriately inserted, at a predetermined aligned and spaced distance relationship relative to the lip.

16. (new) The shell of claim 3, wherein the fluid transfer port includes a Luer lock fitting.

17. (new) The shell of claim 16, wherein the Luer lock is a male fitting.

18. (new) The shell of claim 16, wherein the Luer lock is a female fitting.

19. (new) The shell of claim 3, wherein the shell is a one-piece shell.

20. (new) The shell of claim 3, wherein the shell is formed of metal.

21. (new) The shell of claim 20, wherein the metal is selected from the group consisting of stainless steel and aluminum.

22. (new) The shell of claim 3, wherein the shell is formed of polymer.

23. (new) The shell of claim 22, wherein the polymer is selected from the group consisting of acrylic and polycarbonate.

24. (new) The shell of claim 23, wherein the shell is formed of polycarbonate ULTEM.

25. (new) The shell of claim 22, wherein the polymer is a transparent or opaque polymer.

26. (new) The shell of claim 3, wherein the shell is transparent or opaque.

27. (new) The shell of claim 20, wherein the shell is formed by machining.

28. (new) The shell of claim 22, wherein the shell is formed by injection molding.

29. (new) An ultrasound probe positioning immersion shell for use between an ultrasound probe having a transducer with elements of varying size and radii aligned along body with a central axis adjacent to the transducer and a human eye with a cornea, the shell comprising:

- a. an upper cylindrical body tapering, at a tapered intermediate body, to a lower cylindrical body, the upper and lower cylindrical bodies defining a central axis, an upper chamber and a lower chamber;
- b. a plurality of guides extending inwardly from the upper cylindrical body and tapered intermediate body and lower cylindrical body, each guide of the plurality of guides having an inwardly facing upper guide edge and an inwardly facing lower guide edge, the inwardly facing lower guide edge offset from the central axis less than the inwardly facing upper guide edge, the upper and lower guide edges defining a predefined inserted and aligned position for the ultrasound probe;
- c. a plurality of vents, at least one vent of the plurality situated between guides of the plurality of guides, the vents of the plurality of vents communicating between the lower chamber and the upper chamber;
- d. a fluid transfer port extending through the upper or lower cylindrical body to communicate with an upper chamber; and,
- e. a lip, for contacting the human eye, the lip situated at a lower extreme of the lower cylindrical body.

30. (new) The shell of claim 29, further comprising a continuous sliding surface extending along at least one of the guides of the plurality of guides, the continuous sliding surface further defining the predefined inserted and aligned position for the ultrasound probe.

31. (new) The shell of claim 30, wherein the continuous sliding surface is arcuate.

32. (new) The shell of claim 29, wherein the ultrasound body has an arcuate annulus and further comprising a keeper tab, the keeper tab springingly, resiliently, biased inwardly from the upper cylindrical body, so as to engage the arcuate annulus when the ultrasound probe occupies the predefined inserted and aligned position.

33. (new) The shell of claim 29, wherein the inwardly directed guide edges mate with and stoppingly accommodate the ultrasound probe.

34. (new) The shell of claim 32, wherein the keeper tab springingly, resiliently, biases a probe toward and against the guide surfaces.

35. (new) The shell of claim 32, wherein the keeper tab stoppingly engages the arcuate annulus.

36. (new) The shell of claim 29, further comprising a threaded hole in the upper cylindrical body.

37. (new) The shell of claim 29, wherein each of the external guide surfaces of the plurality of external guide surfaces are arcuate.

38. (new) The shell of claim 29, wherein the fluid transfer port includes a Luer lock fitting.

39. (new) The shell of claim 38, wherein the Luer lock is a male fitting.

40. (new) The shell of claim 38, wherein the Luer lock is a female fitting.

41. (new) The shell of claim 29, wherein the shell is a one-piece shell.

42. (new) The shell of claim 29, wherein the shell is formed of metal.

43. (new) The shell of claim 42, wherein the metal is selected from the group consisting of stainless steel and aluminum.

44. (new) The shell of claim 29, wherein the shell is formed of polymer.

45. (new) The shell of claim 44, wherein the polymer is selected from the group consisting of acrylic and polycarbonate.

46. (new) The shell of claim 45, wherein the shell is formed of polycarbonate ULTEM.

47. (new) The shell of claim 44, wherein the polymer is a transparent or opaque polymer.

48. (new) The shell of claim 29, wherein the shell is transparent or opaque.

49. (new) The shell of claim 42, wherein the shell is formed by machining.

50. (new) The shell of claim 44, wherein the shell is formed by injection molding.

51. (new) An ultrasound probe positioning immersion shell for use between an ultrasound probe having a transducer carried in a body region adjacent the transducer and a human eye with a cornea, wherein the shell includes a probe containing the transducer:

- a. a body with an upper chamber and a lower chamber;
- b. guide means defining a predetermined inserted position for the transducer and the body region adjacent the transducer, such that, in the predetermined inserted position, the transducer is located in the lower chamber and oriented for distance measurement;
- c. vent means communicating between the upper chamber and the lower chamber;
- d. a fluid transfer port extending through the body to communicate with the upper chamber; and,
- e. a lip, for contacting the human eye, the lip situated at a lower extreme of the lower chamber defined by the body.

52. (new) The shell of claim 51, wherein the guide means further define an insertion path for the ultrasound probe, which insertion path leads through the upper chamber and into the lower chamber so as to position the body region adjacent the transducer of the ultrasound probe in the predetermined inserted position.

53. (new) The shell of claim 51, wherein the shell further comprises keeper means to springingly engage and retain the ultrasound probe in the predetermined engaged position.

54. (new) The shell of claim 51, wherein the transducer is co-axially oriented with respect to the lip when in the predetermined inserted position.

55. (new) The shell of claim 51, wherein the shell is transparent or opaque.

56. (new) The shell of claim 51, wherein the shell is a one-piece polymer body.

57. (new) A method of positioning an ultrasound probe, the ultrasound probe including a transducer and a body adjacent the transducer, relative to a human eye with a cornea, the method comprising the steps of:

- a. providing a shell, the shell including:
 - (1) a body with an upper chamber and a lower chamber;
 - (2) guide means defining a predetermined inserted position for the transducer and the body region adjacent the transducer, such that, in the predetermined inserted position, the transducer is located in the lower chamber and oriented for distance measurement;
 - (3) vent means communicating between the upper chamber and the lower chamber;
 - (4) a fluid transfer port extending through the body to communicate with the upper chamber; and,
 - (5) a lip, for contacting the human eye, the lip situated at a lower extreme of the lower chamber defined by the body;
- b. inserting the ultrasound probe into the shell until the predetermined inserted position is achieved; and,
- c. placing the shell on the human eye, with the lip about the cornea.

58. (new) The method of claim 57, wherein the step of inserting precedes the step of placing.

59. (new) The method of claim 57, wherein the step of placing precedes the step of inserting.

60. (new) The method of claim 57, wherein the shell is transparent and the method further includes the step of visually verifying the placing step by observing the cornea within the lip.

61. (new) The method of claim 57, further comprising the step of filling the lower chamber with media by injecting media through the fluid transfer port.

62. (new) The method of claim 61, wherein the media fills between the cornea and the transducer of the ultrasound probe as a result of the filling step.

63. (new) The method of claim 61, wherein air is displaced through the venting means during the filling step.

64. (new) The method of claim 57, wherein the shell further includes sliding means to direct the ultrasound probe to the predetermined inserted position.

65. (new) The method of claim 57, wherein the shell further includes keeper means to retain the ultrasound probe in the predetermined insertion position.

66. (new) The method of claim 61, further including the step of measuring a distance of the eye through the cornea with the transducer of ultrasound probe subsequent to the filling step.